

MANAGING EDITORS	SPECIAL FIELDS	ADVISORY EDITORS
<b>Rudi Balling</b> Institut für Säugetiergenetik, Ingolstädter Landstrasse 1, D-85764 Oberschleissheim, Germany Fax: 89/31 87-30 99 e-mail: balling@gsf.de	Molecular embryology; Genetics; Skeletal development; Developmental control genes	A. Gossler, Bar Harbor, USA W. Wurst, Oberschleissheim, Germany
<b>Bodo Christ</b> Anatomisches Institut II, Albert-Ludwigs-Universität, Albertstr. 17, D-79104 Freiburg i.Br., Germany Fax: 7 61/2 03 50 91 e-mail: christb@ruf.uni-freiburg.de	Embryology; Developmental biology, Morphogenesis; Differentiation	B. Brand-Saberi, Freiburg, Germany C.P. Ordahl, San Francisco, USA F. Wachtler, Vienna, Austria
<b>Andrew Copp</b> Institute of Child Health, 30 Guilford Street, London WC1N 1EH, UK Fax: 1 71/8 31 43 66 e-mail: a.copp@ich.ucl.ac.uk	Developmental biology; Genetics; Gene expression; Malformations; Nervous system and heart	P. Martin, London, UK
<b>Steven T. Kitai</b> Department of Anatomy and Neurobiology, University of Tennessee College of Medicine, 875 Monroe Avenue, Memphis, TN 38163, USA Fax: 9 01/4 48-46 85 e-mail: skitai@utmem1.utmem.edu	Electrophysiology; Neuroanatomy, Neurobehavior	Y. Kawaguchi, Nagoya, Japan
<b>Wilhelm Kriz (Reviews Editor)</b> Institut für Anatomie und Zellbiologie der Universität, Im Neuenheimer Feld 307, D-69120 Heidelberg, Germany Fax: 62 21/54 49 51 e-mail: kriz@novsrv1.pio1.uni-heidelberg.de	Urinary organs; Transporting epithelia; Lymphatic system	B. Kaissling, Zurich, Switzerland C. Pilgrim, Ulm, Germany T. Sakai, Tokyo, Japan
<b>Enrico Mugnaini</b> Northwestern Institute for Neuroscience (NUIN), 320 E. Superior Street, 5-474 Searle Building, Chicago, IL 60611, USA Fax: 3 12/5 03-73 30 e-mail: mugnaini@nwu.edu	Neuroanatomy; Neurocytology; Developmental neurobiology	H.G. Gundersen, Aarhus, Denmark M.P. Mattson, Lexington, USA P. Petrusz, Chapel Hill, USA
<b>Ole Pette Ottersen</b> Institute of Basic Medical Sciences, Department of Anatomy, University of Oslo, Sognsvannsv. 9, P.O. Box 1105 Blindern, N-0317 Oslo 3, Norway Fax: 2/2 85 12 78 e-mail: o.p.ottersen@basalmed.uio.no	Neuroanatomy; Immunocytochemical techniques; Amino acid neurotransmitters	L. Brodin, Stockholm, Sweden J. Broman, Lund, Sweden M.A. Merchan, Salamanca, Spain
<b>Esmond J. Sanders</b> Department of Physiology, University of Alberta, Edmonton, Alberta, Canada T6G 2H7 Fax: 4 03/4 92-89 15 e-mail: esanders@gpu.srv.ualberta.ca	Embryology; Cell adhesion; Cell migration; Extracellular matrix	D. Begg, Edmonton, Canada O. Blaschuk, Montreal, Canada A. Watson, London, Canada
<b>Frank Sundler</b> Department of Physiology and Neuroscience, Neuroendocrine Cell Biology, E-bloeket, 5:e vån., University Hospital, S-22185 Lund, Sweden Fax: 46/17 77 20	Enteric nervous system; Endocrine cells; Neuropeptides and peptide hormones	Y. Cetin, Marburg, Germany N. Danielsen, Lund, Sweden M. Reinecke, Zurich, Switzerland
<b>Irma Thesleff</b> Institute of Biotechnology, University of Helsinki, P.O. Box 56, FIN-00014 Helsinki, Finland Fax: 970-85 95 60 e-mail: Thesleff@operoni.helsinki.fi	Organogenesis in vertebrates; Craniofacial development; Epithelial-mesenchymal interactions	H. Sariola, Helsinki, Finland S. Vainio, Oulu, Finland
<b>Karl Zilles (Coordinating Editor)</b> Heinrich-Heine-Universität, C. und O. Vogt-Institut für Hirnforschung, Postfach 101007, D-40001 Düsseldorf, Germany Fax: 2 11/8 11 23 36 e-mail: zilles@hirn.uni-duesseldorf.de	Neuroanatomy; Structure of the forebrain; Ontogeny of the brain; Image analysis; Transmitter receptors	M. Frotscher, Freiburg, Germany H.B.M. Uylings, Amsterdam, Netherlands A. Wree, Rostock, Germany



# Anatomy and Embryology

This journal was founded in 1875 as the *Zeitschrift für Anatomie und Entwicklungsgeschichte*, edited by *W. His* and *W. Braune* and published by *F.C.W. Vogel* in Leipzig. After its second year, in 1877, the journal became the *Anatomische Abteilung* of the *Archiv für Anatomie und Physiologie*, edited by *His* and *Braune* and published by *Veit & Co.* in Leipzig. From 1892 through 1903 *His* was the sole editor. In 1904 *W. Waldeyer* became the editor. From 1913 until 1919 the journal appeared as *Archiv für Anatomie*, edited by *W. von Waldeyer-Hartz*, *H. Virchow* and *P. Röthig*. It was published until 1915 by *Veit & Co.* in Leipzig and later by *de Gruyter & Co.* in Berlin.

After 1919, publication was suspended, but in 1921 the *Archiv für Anatomie* merged with *Anatomische Hefte* to become *Abteilung 1* of the *Zeitschrift für die gesamte Anatomie*. *Anatomische Hefte* had begun in 1892 with *F. Merkel* and *R. Bonnet* as editors and *J.F. Bergmann* as publisher in Wiesbaden. In 1919 *E. Kallius* and *F. Heiderich* became the editors and *Bergmann* moved to Munich. Fifty-nine volumes had been published by 1920. When the journals combined in 1921, the numbering of the volumes continued the sequence of *Anatomische Hefte* without a break, but the name adopted was the original name of the older journal. Therefore, the *Zeitschrift für Anatomie und Entwicklungsgeschichte* (*Abteilung 1* of the *Zeitschrift für die gesamte Anatomie*) re-appeared as volume 60 in 1921. *J.F. Bergmann*, Munich and *J. Springer*, Berlin were the joint publishers. The editors were coopted from among those of both parent journals – *Waldeyer-Hartz* and *Kallius*, with the addition of *H. Braus* for the first three volumes. From volume 63 to volume 76 inclusive, *Kallius* and *Braus* were the editors and from volume 77 to volume 103 *Kallius* was the sole editor. Since volume 88 *Springer* has been the sole publisher.

In 1934, with no. 3 of volume 103, *Curt Elze* became the editor and the full title of the journal was shortened to *Zeitschrift für Anatomie und Entwicklungsgeschichte*. From volume 116 to volume 121 *C. Elze* shared the editing work with *K. Zeiger* and from volume 122 to volume 126, with *R. Ortmann*. With volume 126 *R. Ortmann* became the managing editor and was soon joined (volume 127) by an international editorial board. In 1974, the sub-

title *Journal of Anatomy and Embryology* was introduced, but it was used for two volumes only. With volume 146 (1974) the main title became *Anatomy and Embryology*; the subtitle at that point was *Zeitschrift für Anatomie und Entwicklungsgeschichte*. Since volume 166, no. 2 (January 1983), the journal has been published without a subtitle. In 1978, with volume 155, *K. Fleischhauer* and *S.L. Palay* became the managing editors. Beginning with volume 171 (1985) the managing editors were: *R. Bellairs*, *K. Fleischhauer*, *W.-G. Forssmann*, *W. Kriz*, *S.L. Palay*, *F. Walberg*. As of volume 179, no. 3 (1989), *E. Mugnaini* moved to the board of managing editors. In 1989, beginning with volume 180, *B. Christ*, *G. Gabella* and *K. Zilles* were added to the board of managing editors; *K. Fleischhauer* and *W.-G. Forssmann* stepped down. In 1992, beginning with volume 185, *O.P. Ottersen* moved to the board; *F. Walberg* stepped down. In 1993, at the end of volume 187, *G. Gabella* resigned. In 1993, beginning with volume 188, *S.T. Kitai*, *E. Raviola*, *E.J. Sanders*, and *F. Sundler* joined the board of managing editors. In 1996, beginning with volume 193, *R. Balling* was added to the board of managing editors. In 1997, with the completion of volume 195, *E. Raviola* resigned and with the completion of volume 196, *R. Bellairs* resigned. In 1998, beginning with volume 197, *I. Thesleff* and *A. Copp* joined the board of managing editors.

## Copyright

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis); that it is not under consideration for publication elsewhere; that its publication has been approved by all coauthors, if any, as well as by the responsible authorities at the institute where the work has been carried out; that, if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the publisher; and that the manuscript will not be published elsewhere in any language without the consent of the copyright holders.

All articles published in this journal are protected by copyright, which covers the exclusive rights to reproduce and distribute the article (e.g., as offprints), all translation rights

as well as the rights to publish the article in any electronic form. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic data bases, video disks, etc., without first obtaining written permission from the publisher.

The use of general descriptive names, trade names, trademarks, etc., in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

While the advice and information in this journal is believed to be true and accurate at the date of its going to press, neither the authors, the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

*Special regulations for photocopies in the USA:* Photocopies may be made for personal or in-house use beyond the limitations stipulated under Section 107 or 108 of U.S. Copyright Law, provided a fee is paid. All fees should be paid to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA, stating the ISSN 0340-2061, the volume, and the first and last page numbers of each article copied. The copyright owner's consent does not include copying for general distribution, promotion, new works, or resale. In these cases, specific written permission must first be obtained from the publisher.

The Canada Institute for Scientific and Technical Information (CISTI) provides a comprehensive, world-wide document delivery service for all Springer-Verlag journals. For more information, or to place an order for a copyright-cleared Springer-Verlag document, please contact Client Assistant, Document Delivery, Canada Institute for Scientific and Technical Information, Ottawa K1A 0S2, Canada (Tel: 613-993-9251; Fax: 613-952-8243; e-mail: cisti.docdel@nrc.ca).

## Typesetters and printers

Stürtz AG, Würzburg

© Springer-Verlag Berlin Heidelberg 1999  
Springer-Verlag GmbH & Co. KG  
D-14197 Berlin, Germany

Printed in Germany



Springer



# Contents of Volume 199 - 1999

- Abe H, Otoi T, Tachikawa S, Yamashita S, Satoh T, Hoshi H: Fine structure of bovine morulae and blastocysts in vivo and in vitro 519
- Accili D, Gabrielli MG, Menghi G, Matarazzi G: Developmental changes of sugar occurrence and distribution in the rat submandibular and sublingual glands 113
- Aguirre JA → Coveñas R 161
- Allt G → Lawrenson JG 29
- Allt G → Orte C 509
- Alpár A → Tömböl T 169
- Assisi L → Lamanna C 397
- Baber MA → Sorrell JM 45
- Baizer JS → Reynhout K 75
- Baumann KI → Halata Z 427
- Berger UV, Hediger MA: Distribution of peptide transporter PEPT2 mRNA in the rat nervous system 439
- Berti E → Pannese E 199
- Beyer C: Estrogen and the developing mammalian brain 379
- Bittner RE, Schöfer C, Weipoltshammer K, Ivanova S, Streubel B, Hauser E, Freilinger M, Höger H, Elbe-Bürger A, Wachtler F: Recruitment of bone-marrow-derived cells by skeletal and cardiac muscle in adult dystrophic *mdx* mice 391
- Boer-van Huizen RT de, Donkelaar HJ ten: Early development of descending supraspinal pathways: a tracing study in fixed and isolated rat embryos 539
- Botte V → Lamanna C 397
- Brehmer A, Schrödl F, Neuhuber W, Hens J, Timmermans J-P: Comparison of enteric neuronal morphology as demonstrated by Dil-tracing under different tissue-handling conditions 57
- Brück I, Greve T, Hyttel P: Morphology of the oocyte-follicular connection in the mare 21
- Butler CM, Shaw G, Renfree MB: Development of the penis and clitoris in the tammar wallaby, *Macropus eugenii* 451
- Caplan AI → Sorrell JM 45
- Capper-Loup C, Rubin BP, Rager G: Extracellular matrix and development of laminae in the dorsal lateral geniculate nucleus in the tree shrew (*Tupaia belangeri*) 549
- Carrino DA → Sorrell JM 45
- Cecio A → Lamanna C 397
- Claassen H → Kimpel M 281
- Costagliola A → Lamanna C 397
- Coveñas R, León M de, Narváez JA, Aguirre JA, Tramu G, González-Barón S: Anatomical distribution of beta-endorphin (1-27) in the cat brainstem: an immunocytochemical study 161
- Csillik B → Knyihar-Csillik E 125
- Dabiké M, Preller A: Cytoarchitecture of *Caudiverbera caudiverbera* stage VI oocytes: a light and electron microscope study 489
- Dantzer V → Pfarrer C 63
- DeFelici M → Faussonne-Pellegrini MS 459
- Donkelaar HJ ten → Boer-van Huizen RT de 539
- Dünker N: Serotonergic neurons and processes in the adult and developing retina of *Ichthyophis kohtaeensis* (Amphibia; Gymnophiona) 35
- Eckstein F, Merz B, Schön M, Jacobs CR, Putz R: Tension and bending, but not compression alone determine the functional adaptation of subchondral bone in incongruous joints 85
- Eckstein F → Graichen H 239
- Elbe-Bürger A → Bittner RE 391
- Englmeier K-H → Graichen H 239
- Ergün S, Harneit S, Paust HJ, Mukhopadhyay AK, Holstein AF: Endothelin and endothelin receptors A and B in the human testis 207
- Eriksson A → Johansson B 225
- Faussonne-Pellegrini MS, Matini P, DeFelici M: The cytoskeleton of the myenteric neurons during murine embryonic life 459
- Finn TM → Lawrenson JG 29
- Finn TM → Orte C 509
- Fleiner B → Kimpel M 281
- Freilinger M → Bittner RE 391
- Fushiki S → Mori T 319
- Gabriele ML → Henkel CK 149
- Gabrielli MG → Accili D 113
- Gittenberger-de Groot AC → Vrancken Peeters M-PFM 367
- González-Barón S → Coveñas R 161
- Graichen H, Lochmüller E-M, Wolf E, Langkabel B, Stammberger T, Haubner M, Renner-Müller I, Englmeier K-H, Eckstein F: A non-destructive technique for 3-D microstructural phenotypic characterisation of bones in genetically altered mice: preliminary data in growth hormone transgenic animals and normal controls 239
- Green GGR → Janahmadi M 563
- Greve T → Brück I 21
- Grim M, Zelená J, Halata Z, Valášek P, Szeder V, Jeřábková G: Development of mechanoreceptor numbers in embryonic chick-quail chimeras 349
- Halata Z, Baumann KI: Sensory nerve endings in the hard palate and papilla incisiva of the rhesus monkey 427
- Halata Z → Grim M 349
- Harada Y → Mori T 319
- Harneit S → Ergün S 207
- Haubner M → Graichen H 239
- Hauser E → Bittner RE 391
- Hayashi M, Mitsunaga F, Ohira K, Shimizu K, Yamashita A: Development of full-length Trk B-immunoreactive structures in the hippocampal formation of the macaque monkey 529
- Hearne PG → Janahmadi M 563
- Hediger MA → Berger UV 439
- Henkel CK, Gabriele ML: Organization of the disynaptic pathway from the anteroventral cochlear nucleus to the lateral superior olivary nucleus in the ferret 149
- Hens J → Brehmer A 57
- Höger H → Bittner RE 391
- Holstein AF → Ergün S 207
- Hoshi H → Abe H 519
- Hyttel P → Brück I 21
- Ichikawa M → Yoshida-Matsuoka J 215
- Inase M → Sakai ST 9
- Iseki S → Wakayama T 419
- Ivanova S → Bittner RE 391
- Iwai M → Mori T 319
- Jacobs CR → Eckstein F 85
- Janahmadi M, Malmierca MS, Hearne PG, Green GGR, Sanders DJ: Morphological and electrophysiological features of F76 and D1 neurones of the sub-oesophageal ganglia of *Helix aspersa* in vitro and in culture 563
- Jarvinen MK, Wollmann WJ, Powrozek TA, Schultz JA, Powley TL: Nitric oxide synthase-containing neurons in the myenteric plexus of the rat gastrointestinal tract: distribution and regional density 99
- Jeřábková G → Grim M 349
- Johansson B, Eriksson A, Thornell L-E: Intermediate filament proteins in developing human arteries 225
- Kagayama M, Sasano Y, Sato H, Kamakura S, Motegi K, Mizoguchi I: Confocal microscopy of dental tubules in human tooth stained with alizarin red 233
- Kamakura S → Kagayama M 233
- Kashima K → Mori T 319
- Kasper M → Witt M 291
- Kimpel M, Claassen H, Fleiner B, Tillmann B: Vascularization and cartilage mineralization of the thyroid cartilage of Munich minipigs and domestic pigs 281
- Knyihar-Csillik E, Rakic P, Csillik B: Development of glomerular synaptic complexes and immunohistochemical differentiation in the superficial dorsal horn of the embryonic primate spinal cord 125
- Kolmac C, Mitrofanis J: Distribution of various neurochemicals within the zona incerta: an immunocytochemical and histochemical study 265
- Kötter R → Staiger JF 357
- Kuwabara Y → Tanaka C 407
- Lamanna C, Costagliola A, Vittoria A, Mayer B, Assisi L, Botte V, Cecio A: NADPH-diaphorase and NOS enzymatic activities in some neurons of reptilian gut and their relationships with two neuropeptides 397
- Langkabel B → Graichen H 239
- Lawrenson JG, Reid AR, Finn TM, Orte C, Allt G: Cerebral and pial microvessels: differential expression of  $\gamma$ -glutamyl transpeptidase and alkaline phosphatase 29
- Lawrenson JG → Orte C 509
- Lázár G, Losonczy A: NADPH-diaphorase-positive neurons and pathways in the brain of the frog *Rana esculenta* 185
- Ledda M → Pannese E 199
- Leiser R → Pfarrer C 63
- León M de → Coveñas R 161



- Lochmüller E-M → Graichen H 239  
 Losonczy A → Lázár G 185  
 Luhmann HJ → Staiger JF 357  
 Malmierca MS → Janahmadi M 563  
 Materazzi G → Accili D 113  
 Matini P → Faussone-Pellegrini MS 459  
 Mayer B → Lamanna C 397  
 Menghi G → Accili D 113  
 Mentink MMT → Vrancken Peeters M-PFM 367  
 Merz B → Eckstein F 85  
 Mitrofanis J → Kolmac C 265  
 Mitsunaga F → Hayashi M 529  
 Mizoguchi I → Kagayama M 233  
 Mori T, Iwai M, Harada Y, Tanaka S, Muramatsu A, Okanoué T, Kashima K, Fushiki S: Parenchymal cells proliferate and differentiate in an organotypic slice culture of the neonatal liver 319  
 Mori Y → Yoshida-Matsuoka J 215  
 Motegi K → Kagayama M 233  
 Mukhopadhyay AK → Ergün S 207  
 Muramatsu A → Mori T 319  
 Narváez JA → Coveñas R 161  
 Németh A → Tömböl T 169  
 Neuhuber W → Brehmer A 57  
 Ohira K → Hayashi M 529  
 Okanoué T → Mori T 319  
 Orte C, Lawrenson JG, Finn TM, Reid AR, Allt G: A comparison of blood-brain barrier and blood-nerve barrier endothelial cell markers 509  
 Orte C → Lawrenson JG 29  
 Osada T → Yoshida-Matsuoka J 215  
 Otoi T → Abe H 519  
 Otto WR, Patel K: Trefoil factor family (TFF)-domain peptides in the mouse: embryonic gastrointestinal expression and wounding response 499  
 Pannese E, Procacci P, Berti E, Ledda M: The perikaryal surface of spinal ganglion neurons: differences between domains in contact with satellite cells and in contact with the extracellular matrix 199  
 Patel K → Otto WR 499  
 Paust HJ → Ergün S 207  
 Pfarrer C, Winther H, Leiser R, Dantzer V: The development of the endotheliochorial mink placenta: light microscopy and scanning electron microscopical morphometry of maternal vascular casts 63  
 Poelmann RE → Vrancken Peeters M-PFM 367  
 Poulain P → Varoquaux F 249  
 Powley TL → Jarvinen MK 99  
 Powrozek TA → Jarvinen MK 99  
 Preller A → Dabiké M 489  
 Procacci P → Pannese E 199  
 Puellas L → Wullimann MF 329  
 Putz R → Eckstein F 85  
 Rager G → Capper-Loup C 549  
 Rakic P → Knyihar-Csillik E 125  
 Reid AR → Lawrenson JG 29  
 Reid AR → Orte C 509  
 Renfree MB → Butler CM 451  
 Renner-Müller I → Graichen H 239  
 Reynhout K, Baizer JS: Immunoreactivity for calcium-binding proteins in the claustrum of the monkey 75  
 Ridyard MS, Sanders EJ: Potential roles for focal adhesion kinase in development 1  
 Rubin BP → Capper-Loup C 549  
 Sakai ST, Inase M, Tanji J: Pallidal and cerebellar inputs to thalamocortical neurons projecting to the supplementary motor area in *Macaca fuscata*: a triple-labeling light microscopical study 9  
 Sakai T → Tanaka C 407  
 Sanders DJ → Janahmadi M 563  
 Sanders EJ → Ridyard MS 1  
 Sasano Y → Kagayama M 233  
 Sato H → Kagayama M 233  
 Satoh T → Abe H 519  
 Schöfer C → Bittner RE 391  
 Schön M → Eckstein F 85  
 Schrödl F → Brehmer A 57  
 Schultz JA → Jarvinen MK 99  
 Sebestény T → Tömböl T 169  
 Shaw G → Butler CM 451  
 Shimizu K → Hayashi M 529  
 Sorrell JM, Carrino DA, Baber MA, Caplan AI: Versican in human fetal skin development 45  
 Staiger JF, Kötter R, Zilles K, Luhmann HJ: Connectivity in the somatosensory cortex of the adolescent rat: an in vitro biocytin study 357  
 Stammler T → Graichen H 239  
 Steger K: Transcriptional and translational regulation of gene expression in haploid spermatids 471  
 Streubel B → Bittner RE 391  
 Süß F → Wrobel K-H 301  
 Szeder V → Grim M 349  
 Tachikawa S → Abe H 519  
 Tanaka C, Kuwabara Y, Sakai T: Structural identification and characterization of arteries and veins in the placental stem villi 407  
 Tanaka S → Mori T 319  
 Tanji J → Sakai ST 9  
 Thornell L-E → Johansson B 225  
 Tillmann B → Kimpel M 281  
 Timmermans J-P → Brehmer A 57  
 Tömböl T, Németh A, Sebestény T, Alpár A: Electron microscopical data on the neurons of nuclei subpretectalis and posterior-ventralis thalami. A combined immunohistochemical study 169  
 Tramu G → Coveñas R 161  
 Valášek P → Grim M 349  
 Varoquaux F, Poulain P: Projections of the mediolateral part of the lateral septum to the hypothalamus, revealed by Fos expression and axonal tracing in rats 249  
 Vittoria A → Lamanna C 397  
 Vrancken Peeters M-PFM, Gittenberger-de Groot AC, Mentink MMT, Poelmann RE: Smooth muscle cells and fibroblasts of the coronary arteries derive from epithelial-mesenchymal transformation of the epicardium 367  
 Wachtler F → Bittner RE 391  
 Wakayama T, Iseki S: Specific expression of the mRNA for 25 kDa heat-shock protein in the spermatocytes of mouse seminiferous tubules 419  
 Weipoltshammer K → Bittner RE 391  
 Winther H → Pfarrer C 63  
 Witt M, Kasper M: Distribution of cytokeratin filaments and vimentin in developing human taste buds 291  
 Wolf E → Graichen H 239  
 Wollmann WJ → Jarvinen MK 99  
 Wrobel K-H, Süß F: On the origin and prenatal development of the bovine adrenal gland 301  
 Wullimann MF, Puellas L: Postembryonic neural proliferation in the zebrafish forebrain and its relationship to prosomeric domains 329  
 Yamashita A → Hayashi M 529  
 Yamashita S → Abe H 519  
 Yoshida-Matsuoka J, Osada T, Mori Y, Ichikawa M: A developmental study using three antibodies (VOBM1, VOBM2, and VOM2): immunocytochemical and electron microscopical analysis of the luminal surface of the rat vomeronasal sensory epithelium 215  
 Zelená J → Grim M 349  
 Zilles K → Staiger JF 357

Indexed in *Current Contents*,  
*Index Medicus* and *EMBASE*



# Subject index of Volume 199 · 1999

- Adrenal development; cattle 301–318
- Amphibia
- Caudiverbera caudiverbera* 489–497
  - Ichthyophis kohtaoensis* 35–43
  - Rana esculenta* 185–198
- Apoptosis (see Cell death in development)
- Astrocyte-dependent enzymes; rat 29–34
- Blood
- Blood vessels in testis; human 207–214
  - Intermediate filament protein; human 225–231
- Bone
- Bone marrow transplantation; mouse 391–396
  - Functional adaptation; human 85–97
  - Microstructural characterisation; mouse 239–248
  - Subchondral bone in joints; human 85–97
  - Three-dimensional reconstruction; mouse 239–248
- Bovine
- Adrenal development 301–318
  - Morulae and blastocysts 519–527
- Blood
- Blood-brain barrier; rat 29–34, 509–517
  - Blood-nerve barrier; rat 509–517
- Brain
- Auditory brainstem; ferret 149–160
  - Brain-derived neurotrophin factor; monkey 529–537
  - Brainstem-spinal cord projection; rat 539–547
  - Cerebral cortex-claustrum; monkey 75–83
  - Diencephalon; zebrafish 329–428
  - Endomorphins in brainstem; cat 161–167
  - Estrogen and brain development; mammals 379–390
  - Fos expression in hypothalamus; rat 249–263
  - Hippocampus development; monkey 529–537
  - Lateral geniculate nucleus; tree shrew 549–561
  - Modulatory neurons; chick 169–183
  - Neuronal pathways; frog 185–198
  - Postero-ventralis thalami; chick 169–183
  - Suboesophageal ganglia; snail 563–572
  - Thalamus; monkey 9–19
- Calcium-binding proteins in claustrum; monkey 75–83
- Cartilage mineralization; pig 281–290
- Cat
- Endomorphins in brainstem 161–167
  - Zona incerta cellular organization 265–280
- Cell adhesion; review 1–7
- Cell culture; snail 563–572
- Cell death in development
- Spinal cord; monkey 125–148
- Cell membrane markers; rat 509–517
- Chick embryo
- Modulatory neurons 169–183
- Chick-quail chimeras
- Coronary vessel formation 367–378
  - Mechanoreceptor numbers 349–355
- Coronary vessel formation; chick, quail 367–378
- Corrosion cast SEM; mink 63–74
- Cumulus-oocyte complex; horse 21–28
- Cytoskeleton of myenteric neurons; mouse 459–469
- Danio rerio* (zebrafish)
- Diencephalon 329–428
  - Dentine; human 233–238
- Embryo culture; bovine 519–527
- Endothelium
- Endothelial cell markers; rat 509–517
  - Endothelin receptors; human 207–214
  - Endothelial tube formation; chick, quail 367–378
- Equine
- Oocyte-follicular connection 21–28
- Estrogen and brain development; mammals 379–390
- Extracellular matrix; tree shrew 549–561
- Ferret
- Auditory brainstem 149–160
- Focal adhesion kinase in development; review 1–7
- Gastrointestinal expression of TFF; mouse 499–508
- Gastrointestinal nitrergic neuron enzymes; reptile 397–405
- Gene expression in spermatogenesis; mammals 471–487, mouse 419–425
- Gustatory papillae; human 291–299
- Heat-shock protein mRNA in spermatocytes; mouse 419–425
- Helix aspersa* (snail)
- Suboesophageal ganglia 563–572
- Herbst corpuscles; chick-quail chimera 349–355
- Human
- Dentinal tubules 233–238
  - Endothelial receptors in testis 207–214
  - Microcirculation in testis 207–214
  - Placental villi 407–418
  - Proteins in arteries 225–231
  - Skin, fetal and adult 45–56
  - Stresses in subchondral bone 85–97
  - Placental villi 407–418
- Ichthyophis kohtaoensis* (Gymnophiona) 35–43
- Integrin adhesion molecules; review 1–7
- Intestinal innervation; pig 57–62
- Invertebrate electrophysiology; snail 563–572
- Laryngeal cartilage; pig 281–290
- Liver, in tissue culture; mouse 319–327
- Macaca fascicularis* (monkey)
- Cerebral cortex-claustrum 75–83
  - Hippocampus development 529–537
- Macaca fuscata* (monkey)
- Motor neural systems 9–19
- Macaca mulatta* (rhesus monkey)
- Hard palate innervation 427–437
  - Synaptogenesis 125–148
- Macropus eugenii* (tammar wallaby)
- Penis and clitoris development 451–457
- Mechanoreceptors
- Hard palate; monkey 427–437
  - Regulation of numbers; chick, quail 349–355
- Microcirculation in testis; human 207–214
- Model, humero-ulnar joint; human 85–97
- Microvasculature; mink 63–74
- Morulae and blastocysts; bovine 519–527
- Mouse
- Bones in transgenic mice 239–248
  - Cytoskeleton of myenteric neurones 459–469
  - Dystrophin deficient 391–396
  - Gene expression in spermatogenesis 419–425
  - Liver cell and tissue culture 319–327
  - Muscle regeneration; mouse 391–396
  - TFF-domain peptides 499–508
- Muscular dystrophy; mouse 391–396
- Mustela vison* (mink)
- Placental development 63–74
- Nervous system
- Auditory brainstem; ferret 149–160
  - Descending supraspinal pathways; rat 539–547
  - Enteric; pig 57–62
  - Intestinal innervation; pig 57–62
  - Lateral septum to hypothalamus; rat 249–263
  - Motor systems; monkey 9–19
  - Myenteric plexus; rat 99–112
  - Nitrergic (NO) neurons; rat 99–112
  - Perikaryal projections; rabbit 199–206
  - Peptide transporter PEPT2 mRNA; rat 439–449
  - Spinal ganglion neurons; rabbit 199–206
  - Synaptogenesis; monkey 125–148
  - Triple-labelling neuronal markers; monkey 9–19
- Neural crest cell differentiation; mouse 459–469
- Neurotransmitter; *Ichthyopsis kohtaoensis* 35–43
- Nitrergic neuron enzymes; reptiles 397–405
- Oocyte cytoarchitecture; frog 489–497
- Oocyte-follicular connection; horse 21–28
- Organotypic slice culture of liver; mouse 319–327
- Oryctolagus cuniculus* (rabbit)
- Spinal ganglion neurons 199–206
- Palate innervation; monkey 427–437
- Penis and clitoris development; wallaby 451–457

## Pig

- Cartilage mineralization 281–290
- Enteric nervous system 57–62

## Placenta

- Development; mink 63–74
- Vascular wall; human 407–418

## Prosomeres; zebrafish 329–428

## Rat

- Blood-brain and blood-nerve barriers 509–517
- Cerebral and pial microvessels 29–34
- Descending supraspinal pathways 539–547
- Lateral septum to hypothalamus 249–263
- Myenteric ganglia 99–112
- Peptide transport in nervous system 439–449
- Salivary glands 113–123
- Somatosensory cortex 357–365
- Vomerolnasal organ 215–224
- Zona incerta cellular organization 265–280

Reptiles – *Podarcis sicula* (lizard);

*Thamnophis sirtalis* (snake)

Gastrointestinal tract 397–405

Retina, serotonergic system; *Ichthyopsis kohtaoensis* 35–43

## Reviews

Estrogen and the developing mammalian brain 379–390

Focal adhesion kinase in development 1–7

Regulation of gene expression in spermiogenesis 471–487

Salivary gland; rat 113–123

Sexual differentiation; mammals 379–390

Sexual dimorphism; wallaby 451–457

Skin, fetal and adult; human 45–56

Smooth muscle cell differentiation; chick, quail 367–378

Spermatogenesis; mammals 471–487; mouse 419–425

Synaptogenesis; monkey 125–148

Taste bud development; human 291–299

## Teleosts

*Danio rerio* (zebrafish), brain development 329–428

Testis, microcirculation; human 207–214

TFF-domain peptides; mouse 499–508

Tomography, microcomputed; mouse 239–248

## Tooth development

Dentinal tubules; human 233–238

Transcriptional regulation in spermiogenesis; mammals 471–487

Transgenic bone models; mouse 239–248

Translational regulation in spermiogenesis; mammals 471–487

*Tupaia belangeri* (tree shrew)

Lateral geniculate nucleus 549–561

Versican, proteoglycan in skin; human 45–56

Visual system; tree shrew 549–561

Vomerolnasal sensory epithelium; rat 215–224

Zona incerta; cat, rat 265–280